



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,759	05/26/2005	Gerd Maussner	2002P19550WOUS	2475

28524 7590 06/05/2006

SIEMENS CORPORATION  
INTELLECTUAL PROPERTY DEPARTMENT  
170 WOOD AVENUE SOUTH  
ISELIN, NJ 08830

EXAMINER
----------

BEVERIDGE, RACHEL E

ART UNIT	PAPER NUMBER
----------	--------------

1725

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/536,759	<b>Applicant(s)</b> MAUSSNER ET AL.	
	<b>Examiner</b> Rachel E. Beveridge	<b>Art Unit</b> 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.138(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11, 12 and 14-20 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11, 15-17, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodwater et al. (US 6,173,491 B1) in view of Litwinski et al. (US 6,237,835 B1).

With respect to claims 11, 15-20, Goodwater discloses a method for fixing turbine engine vanes with a component assembly that allows the replacement of airfoils and/or platforms with improved castings in the form of improved alloys or physical geometry, or both (Goodwater, abstract, lines 1 and 6-9). Goodwater discloses a welding method for repair of remaining cracks in the platforms of the turbine vanes, and further plugging all cooling holes (38) in the platforms (4,6) (Goodwater, col. 4, lines 41-45). Furthermore, Goodwater teaches plugs (42) machined to fit into the openings in the airfoil platform (introducing a filling element into the component) and tack welding (44) to hold the plugs (42) in place (connecting the filling element to the component by a fixing method) (Goodwater, col. 4, lines 52-54). Goodwater teaches plugging these holes on the "gaspath surface 40" (first side of a component) (Goodwater, col. 4, lines 41-45 and 46-48). Goodwater discloses electron beam welding as a typical welding method used to weld the replacement airfoils to the stubs of the turbine engine vane platforms

Art Unit: 1725

(Goodwater, col. 1, lines 61-63). Goodwater also discloses laser cladding the gaspath surfaces of the platforms, and states that laser cladding is a welding operation which applies a surface to a base material in which the surface has mechanical properties matching those of the base material (Goodwater, col. 5, lines 38 and 48-50). However, Goodwater lacks a holding element for keeping the plugs in the holes. Litwinski discloses a welding method that can be used for crack repair in a single workpiece (Litwinski, col. 1, lines 10-13). Litwinski teaches a backing member (40), as shown in figures 5 and 6, to be contoured to correspond to the contour [or lack of contour, figure 6] of the workpiece to be welded (Litwinski, col. 7, lines 47-49). Figures 5 and 6 show the backing member (40) to be a shape similar to that of the letter M. Furthermore, Litwinski discloses urging the backing member toward the weld zone, thus constraining the plasticized material within the weld zone (Litwinski, abstract, lines 14-16). Litwinski also discloses the backing member on the workpiece with a contact surface for the ends of the backing member (40), including rollers (46) and the support member (44). See figures 5 and 6. Litwinski teaches the backing support member to be movable relative to the workpiece (Litwinski, abstract, lines 22-23) and can therefore be placed there temporarily. Also, Litwinski's figures 5 and 6 show the backing member (40) with three contacting portions (44, 46) therefore generally holds the workpiece at each of these areas representing more than one holder, specifically three holders. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the crack repair method of Goodwater to include the holding apparatus of Litwinski in

Art Unit: 1725

order to effectively support the weld zone and constrain the plasticized material within the weld zone during joining (Litwinski, col. 1, lines 62-66).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goodwater et al. (US 6,173,491 B1) and Litwinski et al. (US 6,237,835 B1) as applied to claim 1 above, and further in view of Eulenstein et al. (US 2001/0030224 A1).

With respect to claim 12, Goodwater and Litwinski lack disclosure of a spacer placed between the plug and the wall of the crack in the workpiece. However, Eulenstein discloses a foil which serves as a spacer between the components that are to be joined (Eulenstein, p. 2, paragraph 0015, lines 6-8). See the figures to observe the spacer. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined invention of Goodwater and Litwinski to include the spacer of Eulenstein in order to obtain a weld seam that is free of adverse effects (Eulenstein, p. 2, paragraph 0015, lines 8-10).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goodwater et al. (US 6,173,491 B1) and Litwinski et al. (US 6,237,835 B1) as applied to claim 1 above, and further in view of Edgington (US 4,386,051).

With respect to claim 14, Goodwater and Litwinski lack disclosure of a solder method for repairing the cracks. Edgington teaches a method utilizing a specific solder composition which can be used to repair cracks in aluminum and aluminum alloy workpieces (Edgington, col. 4, lines 42-45). Thus, it would have been obvious to one of

Art Unit: 1725

ordinary skill in the art at the time of the invention to modify the combined invention of Goodwater and Litwinski to include the solder method disclosed by Edgington in order to prepare better workpieces that can be used to create objects including boats, rafts, and aircrafts (Edgington, col. 4, lines 45-46).

### ***Allowable Subject Matter***

Claims 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the combined invention of Goodwater, Litwinski, and Eulenstein includes a spacer for the use in repairing cracks in a workpiece however the combined invention does not disclose arranging the spacer in the gap between the plug and the workpiece before the holder is fitted to begin the welding process. This specific step of placing the spacer in a gap before attaching a holder was not found in prior art and is therefore allowable subject matter.

### ***Response to Arguments***

Applicant's arguments filed April 27, 2006 have been fully considered but they are not persuasive.

Applicant argues the combination of Goodwater/Litwinski does not constitute an appropriate *prima facie* combination of references for rejecting the claims, and that the

Art Unit: 1725

combination of references "teaches away" from the claimed invention (pages 5-6). The examiner disagrees. The examiner recognizes that Litwinski teaches the holder urging a surface of the component, and is shown as urging the opposite side of the component from the tool creating the plasticized material. However, Goodwater's plug welding provides for plasticized material on both sides of the component (hence "plug welding"), and it is obvious that Litwinski's friction stir welding tool could also be used for friction plug welding in combination with Goodwater in order to support the weld zone and constrain the plasticized material, as previously pointed out in the rejection of claims 11 and 15-20. Furthermore, the broad claim limitation of simply a "first side" constitutes any side of the component, not just the side of the component being argued by the applicant. During patent examination, the pending claims must be "given the broadest reasonable interpretation." Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969).

The examiner also reminds the applicant that "patents are relevant as prior art for all they contain," as disclosed by the MPEP, which more specifically states,

"The use of patents as references is not limited to what the patentees describe as their own inventions or to the problems with which they are concerned. They are part of the literature of the art, relevant for all they contain." *In re Heck*, 699 F.2d 1331, 1332-33, 216 USPQ 1038, 1039 (Fed. Cir. 1983) (quoting *In re Lemelson*, 397 F.2d 1006, 1009, 158 USPQ 275, 277 (CCPA 1968)).

A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including nonpreferred embodiments. *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). See also *Celeritas Technologies Ltd. v. Rockwell*

Art Unit: 1725

*International Corp.*, 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed. Cir. 1998) (The court held that the prior art anticipated the claims even though it taught away from the claimed invention. "The fact that a modem with a single carrier data signal is shown to be less than optimal does not vitiate the fact that it is disclosed.") MPEP 2123 I.

Applicant also argues that one of ordinary skill in the art would not be motivated to combine Eulenstein with references that describe sealing between the filling element and the component, with regard to claim 12 (page 6). The examiner disagrees. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined invention of Goodwater and Litwinski to include the spacer of Eulenstein in order to obtain a weld seam that is free of adverse effects (Eulenstein, p. 2, paragraph 0015, lines 8-10).

Applicant argues that Edgington fails to remedy the deficiencies of Goodwater and Litwinski with respect to claim 14 (page 6). The examiner disagrees for the same reasons as previously discussed regarding the combination of Goodwater and Litwinski.

### ***Conclusion***



Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rachel E. Beveridge whose telephone number is 571-272-5169. The examiner can normally be reached on Monday through Friday, 9 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1725

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

reb



**JONATHAN JOHNSON**  
**PRIMARY EXAMINER**